

The Road to Recovery: Restoring the balance.

Background

The proven method to eradicate rats from an island is to distribute a rodenticide to every rat. Unfortunately, there is no way to eradicate rats without impact to non-target animals. With solid understanding of the local ecosystem and careful planning, those risks can be mitigated, reduced, or eliminated. Rats were known predators, and reduced the abundance of island plant and animals such as rare seabirds and endemic deer mice. The Anacapa Island Restoration Plan balanced the short-term impact of a rodenticide against the long-term benefits of the eradication. The successful eradication of rats was paramount to protecting and restoring the island ecosystem.

Eradicating rats from the island using the rodenticide brodifacoum was a decision made with careful consideration and planning. The National Park Service’s purpose is to protect the resources and conserve biodiversity. The eradication of rats from Anacapa Island was necessary to protect, and recover the unique biodiversity on the island.

“...the Park Service’s EIS
is a thoughtful, detailed
document”
Ellen Segal Huvelle
*United States District
Judge*

The project was fully evaluated through an open, public process as required by law. The NPS produced an Environmental Impact Statement (EIS) in compliance with the National Environmental Policy Act and solicited input by the public. The EIS took a hard look at all the issues surrounding the project. The decision was made to move forward as the ecological benefit of rat eradication greatly outweighed the impacts to individual animals.

Mitigations and Impacts

The short-term impacts of the project were substantially mitigated. Examples of mitigation measures include:

- live trapping and relocation of the majority of birds of prey.
- protecting a representative sample of Anacapa Deer mice and reintroducing them to the islands post-eradication.
- using a large, green bait pellet to prevent small birds from eating the bait.
- timing of the bait application to eliminate exposure risks to nesting birds.

Despite these mitigation efforts, there were impacts to individual animals on Anacapa. A total of 94 dead birds were found on the island following the project. Ten of these birds were birds of prey (barn owl, kestrel, burrowing owl). The majority of the birds killed were sparrows, particularly juvenile white-crowned sparrows. While individual birds were killed, there was no impact to the species and birds have returned and are doing well on the island.

Recovery

The changes in the Anacapa ecosystem are dramatic. It is apparent that the removal of rats is having a profound positive effect by enhancing the distribution and abundance of native species on the island. We are monitoring only a few of the many species that will benefit from the removal as seen below:

Xantus’s Murrelets: For the first time in decades murrelet nests have been found in areas which rats had previously excluded them. So far, researchers have found 17 nests on the island and in sea caves, the highest number ever recorded. One of these nests is the first documented on Cat Rock since 1927. No sign of rats or depredated eggs found anywhere. At least four nests have hatched and fledged chicks as of May 19, 2003. Radar work has detected a significant increase in the number of Xantus’s Murrelets nesting on Anacapa Island as compared to the past three years.

Both the sea cave nest surveys and the artificial nest monitoring indicated that rats were major predators of Xantus’s Murrelet eggs. The eradication of the rats and removal of the predation is the most likely reason for the rapid increase in murrelet nesting effort and success.

Anacapa deer mice: The deer mouse population has grown tremendously on East Anacapa Island. Densities in spring 2003 were at or above normal numbers for that time of year. Mice were released onto Middle and West Anacapa in April 2003. Recent monitoring found that females are pregnant or have already produced young. We expect to see significant population increases through the summer breeding season.

Land birds: Landbird monitoring in the spring of 2002 demonstrated that the bait application on East Anacapa had a short-term impact to birds on the island. Survey data indicated that birds were as or more abundant on East Anacapa than adjacent Middle Anacapa (where rats still occurred). In addition, songbirds were successfully breeding on East Anacapa Island, including Song Sparrow, House Finch, Orange-Crowned Warbler, Rock Wren, Peregrine Falcon, and Bewick’s Wren. There was no sign of successful breeding on Middle Anacapa.

Side-blotched lizards: In spring 2002 the survivorship of juvenile lizards nearly doubled on rat-free East Anacapa Island. No similar increase was seen on Middle Anacapa where rats were still present.

Channel Islands slender salamanders: Juvenile salamanders had an increase in juvenile survivorship on East Anacapa Island, similar to the response seen by the lizards.

